

DRAFT ENVIRONMENTAL ASSESSMENT – March 26, 2007
U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

DRAFT ENVIRONMENTAL ASSESSMENT

**PROPOSED HUNTING REGULATIONS FOR THE LOWER COLORADO RIVER
VALLEY POPULATION OF GREATER SANDHILL CRANES IN THE PACIFIC
FLYWAY**

I. PURPOSE AND NEED FOR ACTION

A. AUTHORITY and RESPONSIBILITY

In the United States the preeminent authority and responsibility for migratory game birds reside with the Secretary of the Interior and are derived from international treaties to which the Constitution specifies that only the Federal Government can be signatory. The key instrument defining Federal authority is the Migratory Bird Treaty Act of 1918 (as amended). Among those species designated as "migratory game birds" for which there is Federal management authority is the taxonomic family *Gruidae*, which includes the five or six generally recognized subspecies of sandhill cranes (*Grus canadensis*) found in North America. Authority for establishing hunting seasons for sandhill cranes is provided in the Migratory Bird Treaty Act and appropriate Federal regulations (50 CFR). Regulations governing the establishment of annual regulations for the hunting of migratory birds are specified in *Title 50 Code of Federal Regulations, Part 20, Subpart K*. Any authorization of hunting or taking of cranes or other migratory birds will be done in compliance with the Migratory Bird Treaty Act and associated regulations.

B. NEED FOR ACTION

Greater and lesser (and Canadian) sandhill cranes are presently hunted in other parts of their range and have been divided into management populations based on their geographic distribution during Fall and Winter. The Lower Colorado River Valley Population (LCRVP) of sandhill cranes is the subject of this proposed action.

The Flyway Management Plan for the LCRVP (Pacific Flyway Council 1983, revised in 1989, 1995) allows for hunting of this population when the wintering population exceeds 2,500 cranes. This population level has now been reached and exceeded (Table 1) and in 2005 the Pacific Flyway proposed a limited season be opened on this population (FR Vol 71, No. 145, Pg. 43012). The 1995 plan also referenced the need to limit agricultural depredations as a consideration in instituting a hunt. However, despite a lack of evidence that this has occurred the Council choose to recommend that a limited hunt be instituted and indicated that the Council is modifying the plan to remove this condition. This assessment considers the action to institute a limited harvest of sandhill cranes from the Lower Colorado River Valley Population by reviewing current management strategies and population objectives, and examining alternatives to current management programs.

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C. SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The geographic scope of this assessment is limited to the range of the Lower Colorado River Valley Population of sandhill cranes. This range includes portions of the States of Idaho, Nevada, Utah, California, Arizona, and extreme Southeastern Oregon (Fig. 1). The temporal scope of this assessment is ongoing, with annual review of applicable population and harvest information as part of the annual regulations process for the hunting of migratory birds (50 CFR part 20).

II. PROPOSED ACTION AND ALTERNATIVES

A. ALTERNATIVE 1 (PREFERRED ALTERNATIVE) - ALLOW A LIMITED TAKE OF SANDHILL CRANES DURING THE OPERATIONAL FALL AND WINTER HUNTING SEASON FRAMEWORK ESTABLISHED ANNUALLY FOR MIGRATORY BIRDS:

The Service proposes to permit the harvest of a limited number of sandhill cranes in the Pacific Flyway from the LCRVP of sandhill cranes. The season would be regulated by the issuance of State permits beginning with the 2007-08 hunting season. This action is implemented within the context of Section 3 of the Migratory Bird Treaty Act of 1918 (as amended), which authorizes the regulation of migratory bird hunting. The proposed action will provide a unique geographic recreational opportunity for sport hunting of this species on a limited basis.

Harvest regulation of LCRVP sandhill cranes will vary with population size, available habitat with hunter access, and vulnerability of sex and age cohorts. An experimental season is proposed for a period of 3-years to assess harvest potential and evaluate permit allowances. This season will be considered on an annual basis to permit adjustments to the proposed season setting process as determined necessary after review of population status and harvest information. The harvest will be monitored by requiring all harvested sandhill cranes to be checked at State operated check stations and the population status will be monitored annually by winter inventories throughout the winter concentration areas. Results will be reported annually at the March Pacific Flyway meeting, and in the annual status summary in the Federal Register for sandhill cranes.

Opportunities to harvest LCRVP cranes will be regulated by objectives and permit allocation procedures described in the Pacific Flyway Management Plan for this population. This plan will include the process to determine the number of permits to be issued in any given year, based on the previous winter inventory and an estimate of population growth in the absence of hunting. All parties eligible for permit allocations have participated in the development of this allocation procedure, and this allocation formula will be subject to review and modification as part of the plan updates periodically conducted by the Pacific Flyway Council. Special State permits, similar to those currently used for harvest regulation of the Rocky Mountain population of sandhill cranes will be employed by all participating States and other government entities

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authorized to issue permits by the Service. The Service will establish the maximum numbers of permits to be issued as part of its normal annual regulations process.

B. ALTERNATIVE 2 - NO ACTION:

This alternative will continue the current closure on hunting of LCRVP cranes throughout their range in the Pacific Flyway. Without an effective mechanism to limit future population growth, these sandhill cranes may exceed existing population objectives and lead to depredation problems involving private agricultural interests throughout their range. Lacking a method to preclude excessive concentrations at specific sites, sandhill cranes may become locally overabundant in specific habitats. Lack of recreational opportunity on these birds may preclude efforts to enhance wetland habitats that directly impact the long-term viability of these birds and many other wetland dependent waterfowl species.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

A. SANDHILL CRANES

Sandhill Cranes are generally divided into 9 management populations in North America (Tacha et al. 1994). The taxonomy of sandhill cranes is presently being revised based on recent genetic studies and results are still subject to some interpretation (Rhymer et al. 2001). However, most biologists recognize 5 or 6 distinct subspecies of sandhill cranes (The American Ornithologists Union (1957), Walkinshaw 1973, Lewis 1977), Tacha (1992). Three of these subspecies constitute small nonmigratory groups of cranes, none of which are hunted: (1) *G. c. pratensis* (Florida Sandhill Crane), (2) *G. c. nesiotis* (Cuban Sandhill Crane), and (3) *G. c. pulla* (Mississippi Sandhill Crane). None of these subspecies would be affected by this proposed action. The subspecies *G. c. rowani* (Canadian Sandhill Crane) is of questionable designation, with the most recent genetic assessment suggesting that this group should be combined with the subspecies *G. c. tabida* (Greater Sandhill Crane) (Rhymer et al. 2001). The greater sandhill crane is the primary subspecies that will be affected by this action. The final subspecies *G. c. canadensis* (Lesser Sandhill Crane) is expected to only occasionally occur within the scope of this proposed action.

Greater and lesser (and canadian) sandhill cranes are presently hunted in other parts of their range and have been divided into management populations based on their geographic distribution during Fall and Winter. These management populations are: (1) the Midcontinent Population, (2) the Rocky Mountain Population, (3) The Pacific Flyway Population of lesser sandhill cranes, (4) The Central Valley Population of greater sandhill cranes, and (5) the LCRVP of greater sandhill cranes. It is the LCRVP population of sandhill cranes that is the subject of this proposed action. The first three populations are presently hunted in Canada and/or the United States. The last two populations (Central Valley Population and Lower Colorado River Valley Population) are presently not hunted. All of these populations have approved Flyway management plans.

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Tacha et al (1992) describes the general biology of sandhill cranes as follows:

“Sandhill Cranes do not breed until they are 2 to 7 years old, depending on subspecies and population. They are perennially monogamous and provide extended biparental care of their young, families usually staying together 9 to 10 months (Tacha 1988, Nesbitt 1992). They are normally long-lived (up to 20+ years) and lay 2-egg clutches once a year, but rarely raise more than one young to fledging. Their primary social units are pairs and families that combine (in migratory populations) into large, socially unstable flocks during migration and wintering periods. These flocks often concentrate at migratory staging areas and on the wintering grounds, making this species particularly vulnerable to loss of strategic wetlands.”

B. THE LOWER COLORADO RIVER VALLEY POPULATION OF SANDHILL CRANES

The LCRVP of greater sandhill cranes is the smallest of the five management populations of sandhill cranes recognized in the United States (Drewin et al. 1976, Drewin and Lewis 1987). In earlier literature (e.g. Braun 1975, Lewis 1977), this population was called the “Colorado River Valley Population”; however, the name was modified by managers in the 1983 Pacific Flyway management Plan (PFC 1983) to better reflect the wintering distribution of the management population. It is important to note that the population is a management designation, not based on biological differences other than winter distribution from the other greater sandhill crane management populations. This population is believed to overlap with both the Rocky Mountain Population to the East and the Central Valley Greater Population of sandhill cranes to the West of its breeding distribution. Some mixing may occur during Fall and Winter as well. These populations are not believed to be closed, gene flow is suspected, but no genetic studies have been done to our knowledge to substantiate or refute this assumption. The population breeds in a low density, dispersed fashion in the scattered intermountain wetlands. The majority of this population breeds in Nevada, but extends into western Utah, Southwestern Idaho, and extreme Southeastern Oregon (Fig. 1). The population now winters primarily on refuge areas along the lower Colorado River along the border of Arizona and California (Fig. 1).

Status: The LCRVP was first reported to number at least 210 individuals based on a winter count in 1961 (Phillips et al. 1964). In 1973, the first attempt to inventory all of the known wintering areas estimated at least 1,000 cranes in the population (Drewin et al. 1976, Lewis 1977). During the three-year period 1978/79-1980/81 inventories of all known wintering areas were again conducted and these counts estimated totals of 1601, 1681, and 1807 for these 3 winters, respectively. Beginning in 1998, coordinated counts have been conducted at the 4 major wintering areas, Cibola National Wildlife Refuge (NWR), The Colorado River Indian Tribes wetland areas, Sonny Bono Salton Sea NWR, and the Gila River. These areas are believed to winter in excess of 90% of the total number of cranes in the population. These counts have increased fairly steadily from 1,900 in 1998 to the most recent count of 2,772 in 2007 (Table 1). Based on the counts since 1998, the population has been increasing at a rate of approximately

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3.2% per year.

Annual Recruitment: Recruitment surveys for this population of cranes have been conducted at various times in various locations throughout their known breeding range. Results of 3 surveys of approximately 24 areas in Nevada suggest colt production has been increasing. These counts totaled 15, 22 and 70 in 1993, 1999 and 2005, respectively. Drewein et al. (1995) report an average recruitment rate for this population of 4.8%. This is the lowest annual recruitment rate estimated for any of the North American Greater sandhill crane populations presently recognized by management agencies.

Determination of the annual sustainable harvest:

To estimate the potential biological removal allowance (Runge et. al. 2004), average annual growth in the absence of hunting was calculated. The intrinsic rate of growth was estimated as the slope of a simple linear regression of the natural log of the midwinter survey counts in Arizona and California against year (1998-2007). The estimated annual rate of growth is approximately 3%. Using the mean of the last three midwinter counts as a reasonable estimate of the crane population in 2007, the potential biological removal was estimated for the 2007-08 hunting season as 40 cranes ($PBR = 0.03(2692) \times 0.5$, Runge et. al. 2004:308) or approximately $\frac{1}{2}$ of the expected annual rate of increase (Fig 2). The allowable take of 40 cranes would be further reduced by 20% to allow for potential crippling losses.

The allowable harvest of cranes will be divided among: Idaho, Nevada, Utah, Arizona, California, and the Colorado River Indian Tribes (CRIT). Thus each receives one sixth of the total allowable harvest. For 2008, and rounding the numbers down to the smallest whole number, each political entity would be entitled to harvest 5 cranes. Those entities not choosing to issue permits will have their allocation assigned to a floating allocation which may be used by remaining entities. This floating allocation will be apportioned by the Pacific Flyway Council during their annual March meeting.

Provisions for season closure:

Crane seasons would only be offered if the following conditions were met: (1) the three-year average midwinter survey estimate was above 2,500 cranes and (2) the estimated total allowable crane harvest was at least 10 birds. In addition, if the season was closed because the three-year midwinter survey average index fell below 2,500, the season would remain closed until there were two consecutive years in which the three-year midwinter average exceeded 2,500.

C. HABITATS

Sandhill cranes are a wetland dependent species that feed on aquatic vegetation, small vertebrate and invertebrate animals, and waste grain crops. Nesting habitat is typically on the edge of marshy areas where 1 or 2 eggs are laid in a large, open nest. The majority of LCRVP cranes reproduce in Nevada and winter along the Lower Colorado

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River in Arizona and California. Migration is between these two areas. Cranes typically leave breeding areas in late September/early October and arrive in winter habitat in mid October. Northern migration typically begins in mid February.

In Nevada, LCRVP cranes have consistently used wet meadows and irrigated pasture in Northeastern Nevada for nesting. Elko and White Pine counties support the majority of these habitats with fewer breeding pairs in Lincoln, Lander and Eureka counties. Recently (2005) 34 birds have been observed in Humboldt county. The Nevada Department of Wildlife is unsure whether the Humboldt county birds are affiliated with the LCRVP or the Central Valley population of sandhill cranes. Much of the breeding habitat in Nevada is privately owned and used primarily for cattle ranching. These lands are used for pasture or for hay production and are watered either by natural stream flow or irrigated. Interspersed within these meadows and pastures are willow corridors that are essential for nesting and successful rearing of colts.

Currently, the majority of LCRVP cranes winter along the Lower Colorado River in Arizona and California, with the bulk of the population found within Cibola NWR and on land owned by the CRIT. A smaller number are found in the Salton Sea NWR and along the Gila River near Gillespie Dam west of Buckeye, Arizona (Table 1).

Winter roosts are located in slow river backwater areas where birds can stand in shallow water. Cranes leave roosts near dawn to locate grassland areas or grain crops for feeding. Along the Lower Colorado, favored grain crops are corn, although smaller amounts of small grains and alfalfa seedlings are also eaten. Preferred feeding areas are open, with little vegetation that could hide predators. Waste corn or grain left in already harvested fields is preferred for foraging cranes. After feeding, cranes typically loaf in open areas where they are undisturbed. A typical pattern is to leave the roost at dawn for feeding areas, feed for 1 or 2 hours, fly to a loafing area for several hours, return to feed (often in the same field) and return to the roost in late afternoon-early evening.

IV. ENVIRONMENTAL CONSEQUENCES

A. ALTERNATIVE 1 (PREFERRED ALTERNATIVE) - ALLOW A LIMITED TAKE OF LCRVP SANDHILL CRANES DURING GENERAL PACIFIC FLYWAY WATERFOWL SEASONS:

1. The LCRVP of Sandhill Cranes

The LCRVP of sandhill cranes is expected to continue to increase. Hunting opportunities are expected to increase interest in the population by hunters, leading to additional support for monitoring and habitat conservation efforts.

2. Hunters

Monetary expenditures by hunters are associated with goods, services, privileges of

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hunting, economic values of the food provided, and annual effects on crop depredations by cranes. These benefits will be limited due to the limited harvest opportunities that are expected under the harvest allocation process outlined previously. Additional benefits may include increased support for monitoring and habitat enhancement programs that will benefit cranes and other wetland dependent wildlife species.

3. Non-governmental Organizations and the Public

Organizations opposed to hunting in general will be opposed to the addition of additional hunting opportunity. Organizations that generally support hunting are expected to support the proposal. Members of the public neither opposed nor supportive of hunting programs are expected to support the proposal conditional on the implementation being consistent with the long-term maintenance of the population and its continued growth.

4. Business

Minimal financial benefits of limited additional hunting opportunities would be gained by local businesses in those areas where harvest permits were issued for lodging and support services.

B. ALTERNATIVE 2 - NO ACTION:

1. The LCRV population of Sandhill Cranes

The population is expected to continue to increase. In the absence of harvest opportunities, the population is expected to reach levels where crop depredation problems become an issue with local agricultural interests.

2. Hunters

Monetary expenditures by hunters are associated with goods, services, privileges of hunting, economic values of the food provided, and annual effects on crop depredations by cranes. These benefits would not accrue lost if there are no hunting opportunities offered on this population.

3. Non-governmental Organizations and the Public

Organizations opposed to hunting in general will be supportive of this alternative. Such support is not expected to engender additional support for monitoring or habitat improvement projects. Organizations generally supportive of hunting would be disappointed by a decision to continue the existing season closure on this population. Members of the public neither opposed nor supportive of hunting programs would be unaffected by the proposal.

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4. Business

Potential financial benefits of additional hunting opportunities would not accrue. No additional revenue attributable to hunting would be gained.

V. CONSULTATION AND COORDINATION

Technical review of the draft proposal for the limited hunt was conducted by the Study Committee of the Pacific Flyway Council and the proposal was endorsed and recommended for approval by the Pacific Flyway Council (FR Vol 71, No. 145 Pg. 43012). Subsequently, the Service did not approve the proposal at that time but recommended further review and evaluation be conducted through the Environmental Assessment process. This draft Environmental Assessment was then discussed with the staffs of the principle National Wildlife Refuges involved, staff members of CRIT, and representatives of the affected States. Comments from these groups will be incorporated into the final assessment prior to further Federal action.

A. ENDANGERED SPECIES

Consultation under Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), has not been sought in development of this proposal but will be done during the regulatory process to develop frameworks for the 2007-2008? Migratory Game Bird Hunting Regulations. The proposed action is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of their critical habitats. Hunting regulations are designed, among other things, to remove or alleviate conflict between seasons for migratory game birds and the protection and conservation of endangered and threatened species and their habitats. The Service's biological opinions resulting from its consultation under Section 7 are considered public documents and are available for inspection in the Division of Endangered Species and the Division of Migratory Bird Management.

B. NEPA

NEPA considerations associated with the annual regulation-setting process are covered by the programmatic document, "Final Supplemental Environmental Impact Statement: Issuance of Annual Regulations Permitting the Sport Hunting of Migratory Birds (FEIS 88-14)", filed with EPA on June 9, 1988. Notice of Availability was published in the *Federal Register* on June 16, 1988 (53 FR 22582). The Service's Record of Decision was published on August 18, 1988 (53 FR 31341). However, this programmatic document does not prescribe year-specific regulations; those are developed annually based on year specific estimates of population status. These assessments are presented annually in the *Federal Register* for public review and comment

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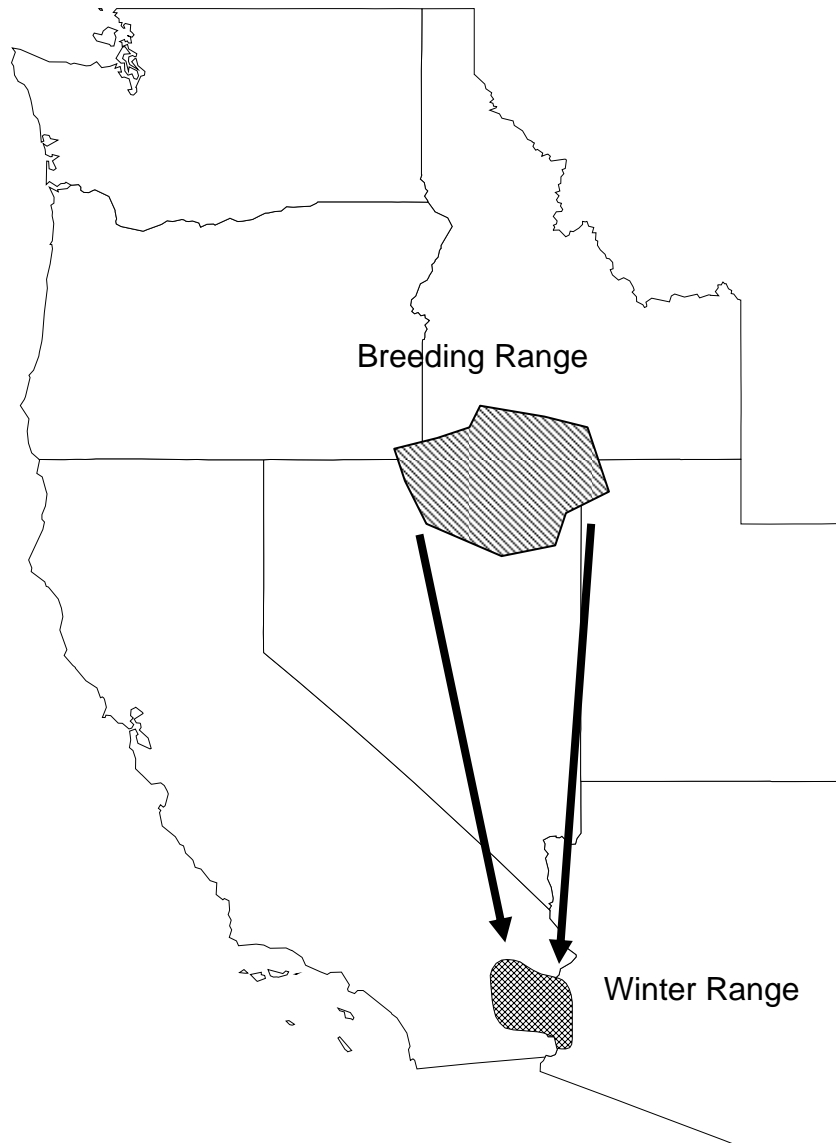


Fig. 1. Approximate breeding and wintering distribution of the Lower Colorado River Population of Sandhill Cranes (PFC 1995).

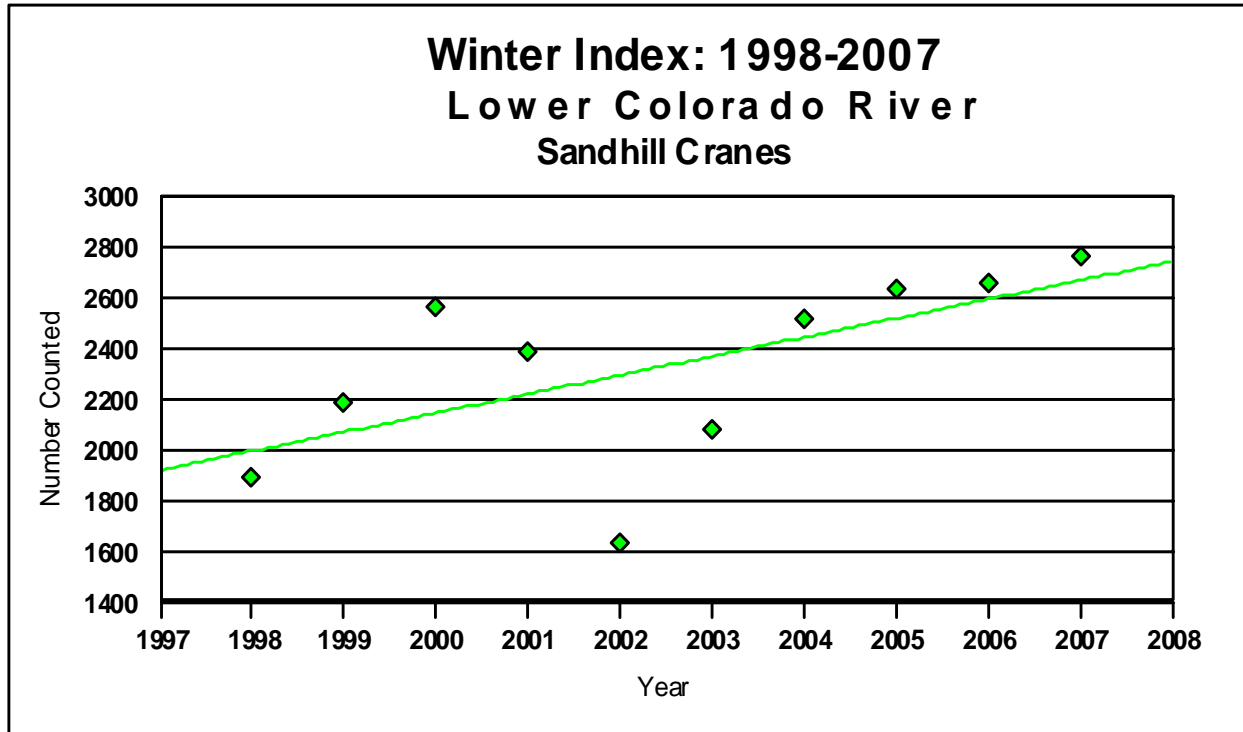


Figure 2. The intrinsic rate of population growth in the absence of hunting for the Lower Colorado River Crane population is calculated by estimating the slope of the natural log (e) of annual midwinter counts from 1998 to 2006.

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Table 1. Winter Counts of Lower Colorado River Population sandhill cranes in Arizona and California, 1998-2007. Counts are coordinated in late January to early February to occur within several days of each other to ensure that individuals are not double counted.

Year	Cibola NWR	Salton Sea NWR	Colorado River Indian	Gila River	Total
1998	775	351	596	178	1900
1999	1200	325	511	163	2199
2000	820	235	1259	252	2566
2001	961	350	952	134	2397
2002	1003	417	168	52	1640
2003	1200	430	455	0	2085
2004	1341	521	354	312	2528
2005	1513	476	457	191	2637
2006	1141	493	673	360	2667
2007	2322	ns	ns	450	2772

Ns= no survey conducted